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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,369

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EXAMINER

KASHNIKOW, ERIK

ART UNIT

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1794

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,369	<b>Applicant(s)</b> SHIRATORI ET AL.	
	<b>Examiner</b> ERIK KASHNIKOW	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 May 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,5,7-12 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,7-12 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 5, 7-9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chidsey et al. (US 5,217,792) in view of Lin (US 5,764,263).

3. In regards to claims 1, 5 and 26 Chidsey et al. teach layered films for use in optical devices (column 1 lines 6-9). Chidsey et al. teach that the films comprise an organic layer bonded to a metallic layer, wherein the organic layer comprises a dye material (column 2 lines 5-20). Chidsey et al. teach that the films are formed using a self assembly feature (column 3 lines 14-15).

4. In regards to claim 4 Chidsey et al. teach that the organic layer contains an aromatic compound (column 6 lines 3-10).

5. In regards to claims 7 and 8 Examiner is treating it as a product by process claim, specifically regarding the term "formed by". It has been shown that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the

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same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113 and *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966).

6. In regards to claim 9 Chidsey et al. teach that the films are alternatively layered to each other (column 2 lines 6-26).

7. While Chidsey et al. teach optic devices which consist of polar multi molecule layers of organic dye, they are silent with regards to the dye being copper (II) phthalocyanine-sodium tetrasulfonate.

8. Lin teaches adding copper (II) phthalocyanine-sodium tetrasulfonate to organic dyes (column 16 lines 46-56).

9. While Chidsey et al. are silent with regards to the concentrations of the dye in the organic layer, and Lin is silent with regards to the concentration of copper (II) phthalocyanine-sodium tetrasulfonate it has been found that absent a showing of criticality with respect to "dye concentration" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "copper phthalocyanine concentration" through routine experimentation to values, including those presently claimed in order to achieve "an optimal nonlinear susceptibilities (column 1 lines 25-30)". It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It has long been an axiom of United States patent law that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. *In re Peterson*, 315 F.3d 1325, 1330

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(Fed. Cir. 2003) ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980) ("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."); *In re Aller*, 220 F.2d 454, 456 (CCPA 1955) ("[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."). "Only if the 'results of optimizing a variable' are 'unexpectedly good' can a patent be obtained for the claimed critical range." *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (quoting *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977)).

10. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Chidsey et al. with that of Lin because the invention of Lin offers a way to adjust the color fidelity (hue, color gamut and optical density) to various levels.

11. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chidsey et al. (US 5,217,792) in view of Lin (US 5,764,263) and Harima et al. (US 5,169,672).

12. As stated above Chidsey et al. and Lin teach a film which comprises an organic layer with a dye and an inorganic layer, however they are silent regarding a titanium containing inorganic layer as well as copper phthalocyanine as the dye.

13. Harima et al. teach thin films containing various dyes (column 2 lines 28-30) which are for use in optical devices (column 12 lines 41-46).

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14. In regards to claims 10 Harima et al. teach that the thin film comprise hydrophobic organic substances, such as polypyrrole and polyaniline (column 2 lines 60-67) which since these compounds are preferred compounds of Applicant, they would also intrinsically be high molecular compound. Harima et al. further teach that the hydrophobic organic substance further comprise a phthalocyanine, specifically copper phthalocyanine (column 3 lines 32-35).

15. In regards to claim 12 Harima et al. teach the film containing the dye is attached to a layer comprising TiO<sub>2</sub> (column 12 lines 1-14).

16. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Chidsey et al. and Lin with that of Harima et al. because the invention of Harima et al. offers the ability to form good color filtration for a wide variety of devices (column 12 lines 25-55).

17. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chidsey et al. (US 5,217,792) in view of Lin (US 5,764,263) and Rubner et al. (US 5,536,573).

18. As stated above Chidsey et al. and Lin teach a film which comprises an organic layer with a dye and an inorganic layer, however they are silent regarding alternate adsorption of aromatic layers and carboxylic layers.

19. In regards to claim 11 Rubner et al. teach that films with good optical properties are formed by an alternate adsorption method of polyaniline and polypyrrole with a polyanion (column 1 lines 14-20 and column 6 lines 50-62). Rubner et al. further teach that the polyanion may be polyacrylic or polymethacrylic acid (column 9 lines 24-30).

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20. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Chidsey et al. and Lin with that of Rubner et al. because the invention of Rubner et al. offers high electrical conductivity and environmental stability (column 3 lines 14-20).

### ***Response to Arguments***

21. Applicant's arguments, see arguments, filed 05/12/09, with respect to the 35 U.S.C. 112 2<sup>nd</sup> paragraph rejections have been fully considered and are persuasive. The 112 2<sup>nd</sup> paragraph rejections of the claims has been withdrawn.

22. Applicant's arguments, see arguments, filed 05/12/09, with respect to the 103(a) rejections over the Lee et al. reference have been fully considered and are persuasive. These rejections of the claims have been withdrawn.

23. Applicant's arguments with respect to claims 1, 3-12 and 26 have been considered but are moot in view of the new ground(s) of rejection.

In regards to Applicant's arguments that the instant invention and the prior art have different purposes, Examiner points out that they are analogous art as it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case Chidsey and the instant invention share a field of endeavor, namely optics. It is noted that "obviousness under 103 is not negated because the motivation to arrive at the

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claimed invention as disclosed by the prior art does not agree with appellant's motivation", *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1966).

24. In regards to Applicant's argument that Chidsey et al. is drawn to monolayer films Examiner points to column 2 lines 5-25 which show that up to 1000 layers may be included in the film.

25. Examiner notes that while Harima and Rubner do not disclose all the features of the present claimed invention, they are used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

### **Conclusion**

26. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (Second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erik Kashnikow  
Examiner  
Art Unit 1794

/Rena L. Dye/  
Supervisory Patent Examiner, Art Unit 1794